

6I71

ONE LANE CABLED PCIE INTERFACE

MANUAL

Preliminary version 1.0

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GENERAL

DESCRIPTION

The 6I71 is a one lane buffered PCI Express cable adapter / redriver that allows remote devices that use the standard one lane PCIE cable interface to be remotely located from the host PC. The 6I71 has a PCIE redriver and supports cable lengths up to 7 meters. The 6I71 has selectable equalization options and 4 status LEDs. The 6I71 is compatible with Mesas 4I73 and 3X20.

HARDWARE CONFIGURATION

GENERAL

Hardware setup jumper positions assume that the 6I71 card is oriented in an upright position, that is, with the PCIE connector facing the user, and the white PCB markings right side up.

DEFAULT SETUP

RECEIVE EQUALIZATION	W3/W4 DOWN = NO EQUALIZATION
TRANSMIT DE-EMPHASIS	W7 DOWN = NO DE-EMPHASIS
TRANSMIT LEVEL	W8 DOWN = NORMAL LEVEL

These default jumper positions are shown in the default jumper position picture on page 3.

RECEIVE EQUALIZATION

The 6I71s re-driver chip supports 4 different levels of receive equalization. Jumpers W3 and W4 select the receive equalization level:

W4	W3	EQUALIZATION
DOWN	DOWN	NO EQUALIZATION
DOWN	UP	0 to 2.5 dB @1.25 GHz
UP	DOWN	2.5 to 4.5 dB @1.25 GHz
UP	UP	4.5 to 6.5 dB @1.25 GHz

TRANSMIT DE-EMPHASIS

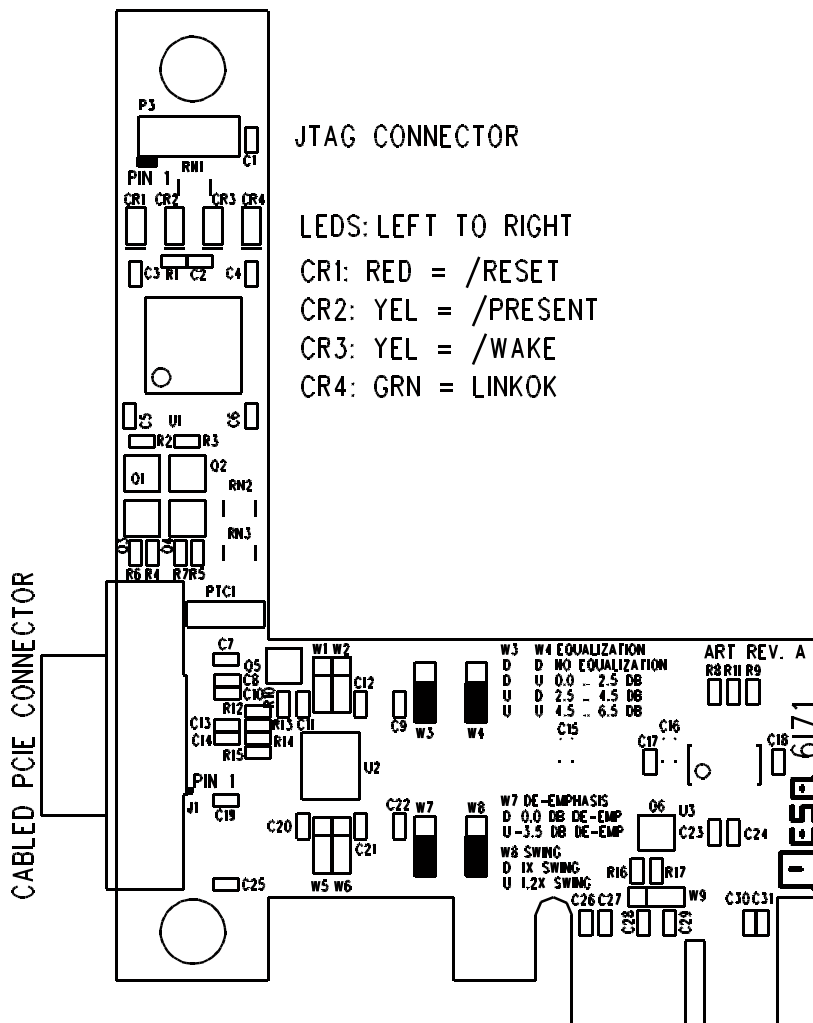
Transmit de-emphasis can be disabled or set to 3.5 dB. W7 select the transmit de-emphasis level. When W7 is down the transmit de-emphasis is disabled, when up, the transmit de-emphasis is set to 3.5 dB.

DRIVE LEVEL

The transmit drive level can be boosted by 20% for long cable applications. W8 controls the output signal boost. When W8 is in the down position, normal signal levels are used, when W8 is in the up position, transmit signal levels are boosted by 20%.

CONNECTORS

CONNECTOR LOCATIONS AND DEFAULT JUMPER POSITIONS



CONNECTORS

JTAG CONNECTOR

The 6I71 brings out the control CPLD JTAG interface to a 10 pin 2MM connector P3. P3 pin-out is as follows:

PIN	FUNCTION	PIN	FUNCTION
1	TMS	6	3.3V
2	TDI	7	NC
3	TDO	8	NC
4	TCK9	9	NC
5	GND	10	NC

PCIE CONNECTOR

The 6I71s PCIE connector is a standard one lane cabled PCIE connector, Molex PN 74960-3018. The PCIE connector is J1. J1 pinout is as follows:

PIN	SIGNAL	PIN	SIGNAL
A1	PERN0	B1	GND
A2	PERP0	B2	RESV
A3	RESV	B3	/CWAKE
A4	GND	B4	/CPRSNT
A5	CREFLKN	B5	GND
A6	CREFLKP	B6	3.3V
A7	GND	B7	CPWRON
A8	/CPERST	B8	PETN0
A9	GND	B9	PETP0

OPERATION

LEDS

The 6I71 has 4 status LEDS, CR1, CR2, CR3 and CR4. These status LEDS convey the following PCIE link status:

LED	COLOR	FUNCTION	CABLE SIGNAL
CR1	RED	/RESET	/CPERST
CR2	YELLOW	/CARD PRESENT	/CPRSNT
CR3	YELLOW	/WAKE	/CWAKE
CR4	GREEN	LINK OK	SIGNALS ON PETXX and PERXX

START UP SEQUENCE

The 6I71 implements the cabled PCIE startup sequence. This sequence is as follows: at power on after local power good is detected, the 6I71 asserts CPWRON high, /CPERST low and waits for /CPRSNT low. When a low /CPRSNT is detected, it enables the CREFCLK signals and starts a timer that determines /CPERST duration, when this timer times out, /CPERST is de-asserted (driven high).

POWER SUPPLY

The 6I71 uses a on card linear regulator to supply the 1.8V re-driver power. Input power is 3.3VV+-10%

REFERENCE

SPECIFICATIONS

POWER	MIN	MAX	NOTES:
POWER SUPPLY	4.75V	5.25V	
POWER CONSUMPTION:	----	150 mA	
TEMPERATURE RANGE -C version	0 °C	+70 °C	
TEMPERATURE RANGE -I version	-40 °C	+85 °C	